

## Haystack Rock and Horse Pasture Ridge pRNA Survey Report

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*Purpose of Survey Report: Perform an Ecological Evaluation for botanical and habitat values. Project Travel and Survey Dates by G. Lind: Weds June 11, 2014 to Monday June 16th, 2014.*

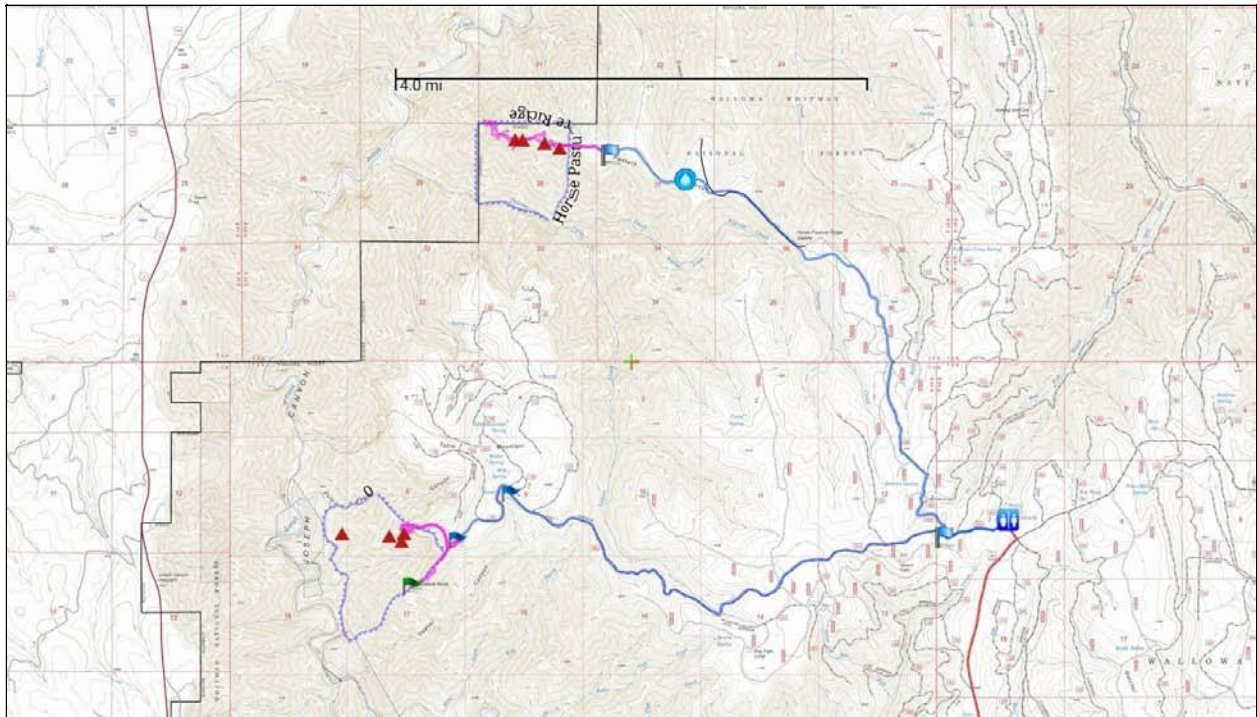
**Access to the pRNAs:** Note: both of these pRNAs are accessed by driving to the general vicinity of Coyote CG using the directions noted below. The routes to each pRNA diverge just west of Coyote CG at the jct of Forest Road 4650 and Forest Road 4655.) [See map 2 below.](#)

Haystack Rock pRNA is located in Wallowa County and is administered by the Wallowa Valley Ranger District of the Wallowa-Whitman National Forest. The legal description is T4N R45E primarily in sections 8 and 17 with small portions found in sections 7 and 18. (*Info from Project Description provided by J. Ferriel*). Vehicle access is by way of Hwy 3 north of Enterprise OR approximately 14 miles to Forest Road 46; Turn right on Forest Road 46 and go approximately 26.5 miles to the junction of Forest Road 46 and Forest Road 4650. Turn left (west) on to Forest Road 4650 and drive (approximately 6.2 miles total) to jct of FS road 150 and then on an unnamed spur to ridge viewpoint/parking area (GPS: [45.839963, -117.210616](#)) . [See map 1-2 inserts below.](#)

Horse Pasture Ridge pRNA is located in Wallowa County and is administered by the Wallowa Valley Ranger District of the Wallowa-Whitman National Forest. The legal description is T5N R45E section 28 (*Info from Project Description provided by J. Ferriel*). Vehicle access is by way of Hwy 3 north of Enterprise OR approximately 14 miles to Forest Road 46; Turn right on Forest Road 46 and go approximately 26.5 miles to the junction of Forest Road 46 and Forest Road 4650. Drive west on 4650 to jct of 4655 and turn north on 4655, going to rd 045, to rd 050, then continue out on Horse Pasture Ridge until you reach an timbered saddle that is an obvious stopping point for full size vehicles (approximately 6.0 miles total). Park there (GPS: [48.88717, -117.183673](#)) and hike approximately 1/4 mile to the pRNA boundary. [See map 1-2 inserts below](#)







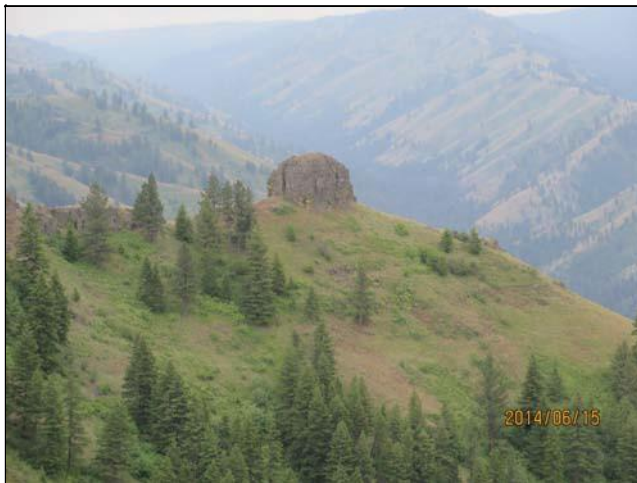
*Map 2. Routes to each pRNA from Coyote Campground (noted with the restroom symbol). (Blue lines are FS roads, pink lines are survey hiking routes. Red icons are the established photo plots/veg plots known from each pRNA). Blue flags are various road junctions or parking areas, round blue water icon is the stockpond on way to Horse Pasture Ridge pRNA parking area, and the green flag is the location of the actual Haystack Rock formation in Haystack Rock pRNA. (Map created using Backcountry Navigator app on a Nexus 10 android tablet, June 2014 by G. Lind).*

## Haystack pRNA Detailed Description

*(Credit: Information below is from Project Description provided by J. Ferriel and sourced from Charlie Johnson).* Proposed: 1988, by Charlie Johnson, Area Ecologist, Acres: 425

Unique Values: Idaho fescue-bluebunch wheatgrass-arrowleaf balsamroot and bluebunch wheatgrass-Sandberg's bluegrass-narrow-leaved skullcap plant associations. The Haystack Rock pRNA and the Horse Pasture Ridge pRNA comprise the area allocated to Management Area 12 within the [JCRA \(Joseph Creek Rangeland Analysis EIS 2005<sup>1</sup>\)](#). Both pRNA's were identified as potential RNAs for their representation of native bunchgrass communities. In ecological terms, the desired condition for the potential RNAs is for maintenance of late-seral plant communities.

Topography: Haystack Rock pRNA is composed of two main west-facing ridges with smaller finger ridges also descending to the west toward Joseph Creek. Pole Patch Canyon forms the north edge of the pRNA. Elevations range from 4637 ft (1414 m) to 2763 ft (843 m). The slopes of the ridges are steep and human foot access is difficult and risky in many areas due to steep slopes, loose rocks and banded cliff faces of basalt andesite. Haystack Rock is a visible landmark on the ridge that makes up the boundary of the pRNA.



Haystack Rock feature



FEID-AGSP bunchgrass site upper ridges

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<sup>1</sup> JCRA 2005. Joseph Creek Rangeland Analysis ROD and FEIS. September 2005, Wallowa-Whitman National Forest.





FEID-AGSP bunchgrass sites mid slopes areas



FEID-AGSP bunchgrass with shrub talus



FEID-AGSP bunchgrass with shrub talus draws on steep south slopes



Forested PSME/PHMA types on north slopes



Shallow soil rigid sage/POSE types

Geology and Soils: Soils were formed in loess and ash mixed with residuum and colluvium from basalt, andesite or welded tuff. Most of the soils in the area are shallow and well drained, combined with small areas of deeper soil, also well drained. (*Info from Project Description provided by J. Ferriel*)

Climate: Eastern Oregon has a temperate continental climate, characterized by arid summers with occasional evening convection thunderstorms and cold winters with the majority of the annual precipitation falling as snow. The closest weather station is in Enterprise, OR and should be a fair approximation for Vance Knoll with differences attributed to Enterprise being closer to and more under the influence of the Wallowa Mountains. The station receives 17.6 inches (44.7 cm) annual precipitation with a mean annual temperature of 43.4 F (6.33 C). Summer high temperatures range into the upper 90's F while winter temperatures can drop to the -20's F. (*Info from Project Description provided by J. Ferriel*)

Springs and seeps: Pole Patch Canyon and the unnamed canyon to the south below Haystack Rock ridge both appear to be dry with no visible springs. No springs were noted on existing topographic USGS maps or FS maps.

Signs of Recreational use: Light recreational use is noted along upper ridgeline, and the parking area noted above for the pRNA is a dispersed camping area used most likely during hunting season. The closest campground is approximately 6 miles to the east outside of the pRNA at Coyote Campground. There is a pack trail noted outside of the pRNA to the nw of Pole Patch Canyon on the USGS topographic map, and the FS 2013 topographic map (Trail #1725) but no trail seems to exist on the ground and no signage was noted. A internet search noted a posting by a previous camper from several years ago that had tried to find this pack trail and was unsuccessful. As an alternative hike, one could likely hike down the spine of Haystack Rock ridge and get to the bottom and Joseph Canyon Creek.

Signs of livestock grazing: The Haystack Rock pRNA is within the Wilder Unit of the Table Mountain C&H Allotment. Wilder pasture is grazed early season and late season. Haystack Rock pRNA is adjacent to private land to the NW and near the southern tip of the pRNA the private lands contain old agricultural fields which likely contain many exotic grasses. Grazing levels alternate between 90 and 164 cow/calf pairs April to mid-May and 100 cow/calf pairs November to December. Utilization allowed is 10% (*Range Info from Project Description provided by J. Ferriel*).

The Haystack pRNA receives light grazing. What little grazing that occurs is located along the old farm fields along the lower elevation western portion of the potential RNA. Because these farm fields do not contain the species for which the potential RNA was identified, final establishment of the RNA boundary would exclude the farm fields and expand the boundary to the best replacement areas for representing the target plant communities (*Info from JCRA EIS 2005*).

Light livestock use was noted during the 2014 survey by G. Lind. Most livestock seem to be using the top ridgeline and the less steep upper portions of the Haystack Rock ridge and the



ridge east of Pole Patch Canyon.

It is not known if livestock get all the way down to Joseph Canyon Creek, but permanent water is available there and if livestock do use the bottom they likely would never leave the canyon to climb back out to the top of the ridge and would instead graze the old homestead pastures along Joseph Creek.

*Old homestead pasture along Joseph Creek.*

Bighorn sheep (5-6 animals) were sighted within the Horse Pasture Ridge pRNA, although none were seen at the Haystack Rock pRNA .

Range conditions in the Joseph Creek Wild and Scenic River corridor are 'satisfactory' with isolated small areas of 'unsatisfactory' range condition. The 'unsatisfactory' condition is evident where annual non-native plant species such as cheatgrass and introduced grass species exist as a relic of homesteading in this area before establishment of the National Forest. Riparian shrubs are present along Joseph Creek and its tributaries at a density and species diversity that would occur naturally. This condition is assumed to occur when utilization of shrubs by livestock and

big game is less than 20 percent (*Info from JCRA 2005*).

For areas within Management Area 12 (*JCRA 2005*), range conditions in the proposed Research Natural Areas are in a good to excellent ecological condition, and a static to upward trend.

These

areas are represented by late-seral plant communities. (*Info from JCRAA 2005*). The condition of the Haystack Rock Potential RNA was evaluated in 2001 by the Blue Mountain Area Ecologist (Charlie Johnson) for a 15-year re-evaluation after the 1986 Joseph Creek Fire. He noted that the area was lightly used by cattle coming upslope from Joseph Creek. Because there is no water in the area, use is very light. Although a formal evaluation had not been completed, his professional judgment indicated that the forage condition was good and stable (Johnson 1992) (*Info from JCRA 2005*).

Disturbance history: unclear to this surveyor (G Lind, 2014) if this area indeed burned in the same fire ([Joseph Creek Fire 1986](#)) that affected Horse Pasture Ridge pRNA, but plot records by Johnson (Plot #169, 1981) mentions past disturbance due to presence of weedy brome grass species. However, the JCRA 2005 FEIS did note that the area had been affected by the 1986 Joseph Creek Fire. Livestock grazing has occurred below the pRNA on private lands and within the pRNA.

Vegetation: This area has excellent condition stands of Idaho fescue-bluebunch wheatgrass-arrowleaf balsamroot and bluebunch wheatgrass-Sandberg's bluegrass-narrow-leaved skullcap plant associations. The area is located high above the old Vawter Homestead and hayfields. The upper portion of the southerly exposed slope of Table Mountain and Joseph Creek canyon is surmounted by the prominent outcrop of Haystack Rock. (*Info from Project Description provided by J. Ferriell*). The JCAA 2005 notes the Haystack pRNA is dominated by shrub-steppe communities such as bluebunch wheatgrass/Idaho fescue/arrowleaf balsamroot; bluebunch wheatgrass/Sandberg's bluegrass/narrow-leaved skullcap; and Talus garland types ([See photos above](#)). Forest vegetation is generally composed of dry Douglas Fir- Ninebark on steep north aspects. ([See photos above](#)).

Occurrence of exotic species: Haystack Rock is adjacent to private land near the lower elevation southern tip of the pRNA along Joseph Creek. The private lands contain old agricultural fields which likely contain many exotic grasses. Weedy species noted are cheatgrass brome (*Bromus tectorum*), rattlesnake brome (*Bromus brizaformis*), soft chess brome (*Bromus mollis*) and at least one small patch of ventenata grass (*Ventenata dubia*) mixed



in with the weedy bromus sites<sup>2</sup>. The brome grass weed sites tend to occur on shallow soils or rocky areas and also will be found in deeper soils as a “weedy spot” in the Idaho Fescue bunchgrass sites. These weedy “spots” within the bunchgrass types can easily be seen in early season as creamy white buckwheat in flower (*Eriogonum heracleoides*) will also be concentrated within or on edges of these weedy grass spots.



*Weedy bromegrass spots in FEID types*



*Weedy bromegrass spots in FEID*



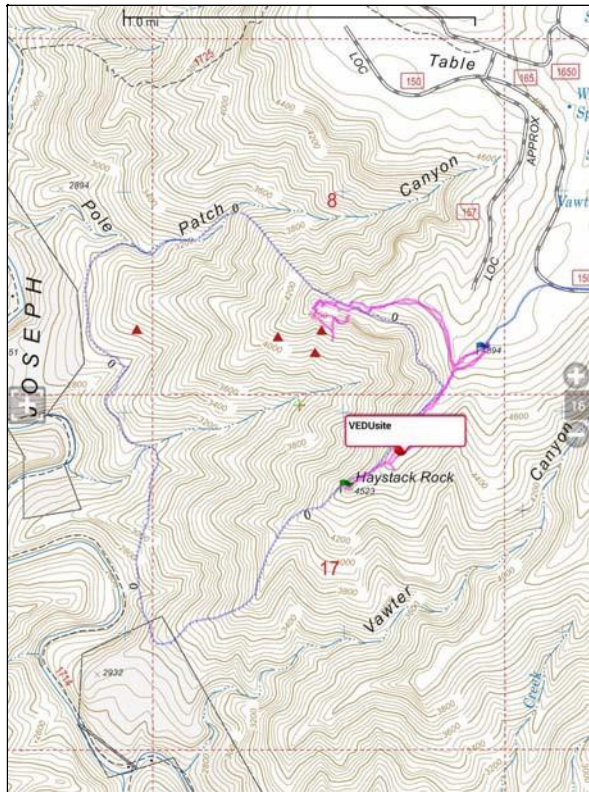
*Bromus brizaeformis* showing “rattlesnake rattle” heads.

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<sup>2</sup> Ventenata dubia site map and photo below

The Lower Joseph Creek Restoration Project, Wallowa-Whitman National Forest (ongoing 2014) notes the presence of scotch thistle and diffuse knapweed for the Table Mt allotment and indicates that the scotch thistle infestation is associated with private pasture lands and is declining in the allotment. The diffuse knapweed is noted as “no change/stable” status in the allotment .

The June 2014 reconnaissance survey (G. Lind) did not note any scotch thistle or diffuse knapweed in the Haystack pRNA or adjacent areas. Weedy brome grasses (BRTE, BRMO, BRBR) are present in many spots, and one small area of ventenata grass was noted within a brome grass weedy spot, just outside of the pRNA. It is very likely that more populations of ventenata grass are present outside and within the pRNA, as habitat is abundant.



*Map of Ventenata dubia site*

*45.835858° N, 117.215463° W*



*Photo of Ventenata dubia*

Rare, threatened, endangered, or sensitive plant species:

Spalding's catchfly (*Silene spaldingii*) is a FWS Threatened Species and potential habitat is suspected in the Table Mt Allotment (Lower Joseph Creek Restoration Project,



Wallowa-Whitman National Forest, Ongoing 2014); however, 2014 field surveys (G. Lind) were likely too early to find this species. No populations of Spalding's catchfly are known from Table Mt Allotment or the pRNA.

Forest Service Sensitive plant species known to occur or with potential include: Snake River Daisy

(*Erigeron disparipilus*), Engelmann's Daisy (*Erigeron engelmanni* var. *davisii*)<sup>3</sup>, and Hazel's Prickly Phlox (*Leptodactylon pungens* ssp. *hazeliae*). There are known sites for Engelmann's daisy in the Horse Pasture Ridge pRNA, but none documented previously in the Haystack pRNA. However, potential Engelmann's daisy habitat and plants were noted in Haystack pRNA that may be *Erigeron engelmanni* var. *davisii*, but specimens need to be confirmed by district botanists. Habitat for Engelmann's daisy seems to be shallow soil rocky areas on ridgelines or rocky side slopes. See photo below of potential Engelmann's daisy specimen (Davis fleabane?).



*Erigeron engelmanni* var. *davisii*?

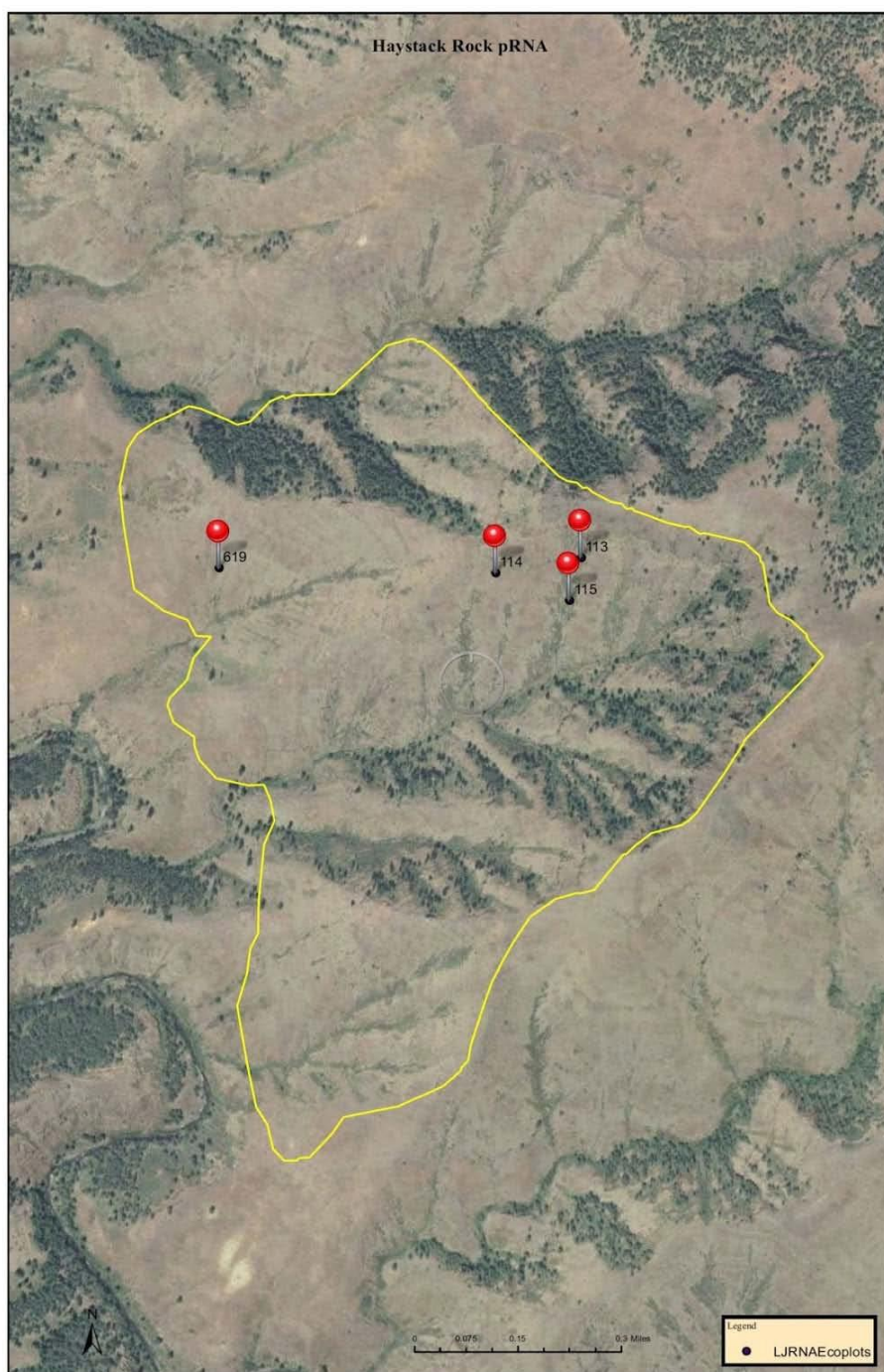
45.841815° N, 117.219250° W

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<sup>3</sup> Note that *Erigeron engelmanni* var. *davisii* has been renamed to Davis' fleabane (*Erigeron davisii*) by recent taxonomic updates.



Permanent research plots and/or photo points: Ecology Plots by Charlie Johnson, Zone Ecologist, or the WWNF Ecology group are noted in [map 3](#) below. These plots were not relocated during the 2014 survey by G. Lind. No photos are available of these plots in 2014. See location info below in table.



Map 3. Haystack Rock pRNA with established photopoints/ecology Plots



Haystack Rock pRNA established Plots/Photopoints

| <u>Plot #</u> | <u>GPS WGS 84*</u>    | <u>UTM *</u>        |
|---------------|-----------------------|---------------------|
| #113          | 45.884073, -117.22011 | 4 82904E, 50 76368N |
| #114          | 45.84051, -117.22274  | 4 82703E, 50 76340N |
| #115          | 45.83981, -117.22058  | 4 82874E, 50 76267N |
| #169          | 45.84074, -117.23104  | 4 82058E, 50 76375N |

\* GPS WGS 84 from G. Lind using Backcountry Navigator app on Nexus 7 tablet. UTM locations from Jennifer Ferriel, WWNF.

Photographs: A larger album of all photos taken by G. Lind in 2014 for both pRNAs can be found at this link:

<https://picasaweb.google.com/117725403025106999373/WWNFRNAProject02?authuser=0&authkey=Gv1sRgCP-I3trN5sLv7wE&feat=directlink>

Flora and Fauna Species List: See plant and animal lists at end of report

## **Summary and Recommendations- Haystack pRNA by G. Lind**

Haystack Rock pRNA is very steep and difficult to walk in. The existing plots were not checked due to terrain issues and safety concerns in 2014, I was alone without backup support in case of an accident or other injury. The entire pRNA has banded cliffs that restrict access and make surveys hazardous. Only the rounded spine of Haystack Rock ridge allows some reasonable safe access downslope from the top ridge. Vegetation types are difficult to map as the steep topography and dissected slopes results in many banded vegetation polygons that tend to be aligned up and down slopes. Much of the upper pRNA by the main ridge is where you find the best FEIS bunchgrass types that are the primary reason for this pRNA. The lower dissected ridges tend to have rocky and shallow soils and support small areas of other POSE types. North aspect slopes have PSME/PHMA types with shrubland talus in between that contain HODO and PHLE2, Sambucus, and Rosa.

This surveyor did not find it useful to spend the time to find plots 113 and 115, as they were just showing the shrub talus types recovering after a fire. Not sure what usefulness these plots are after a point in post-fire history, as shrub talus always comes back vigorous after a fire. What is the new info that these plots would provide? Eco Plot 619 was almost at the bottom slopes of the pRNA and would be difficult to access on a regular basis. As far as is known, there is no access from below on Joseph creek as this stream is designated a Wild Scenic River and any historic homestead road access is likely been restricted by Wild and



Scenic River management guidelines, or obliterated / lost by stream erosion and vegetation growth.. I would suggest establishing new monitoring plots in the FEID types on the upper ridge slopes. The upper slopes of the pRNA have better examples of FEID bunchgrass, and would provide monitoring on the pRNA being grazed by livestock and brome grass weeds are spreading into the FEID bunchgrass types. Most of the steep slopes go to AGSP/POSE or Lithic types. I am not sure I would call these sites excellent condition, maybe good condition with a static trend at best, in my opinion.

There are likely more areas of ventanata grass sites within or adjacent to the weedy brome spots. Also there is high probability that more populations of *Erigeron engelmanni* var. *davisii* are within or adjacent to the Haystack pRNA. This surveyor noted many areas of potential habitat with white flowered erigeron plants. Additional surveys would likely be able to document many more of these *Erigeron engelmanni* var. *davisii* populations if more site data is needed for species status updates.

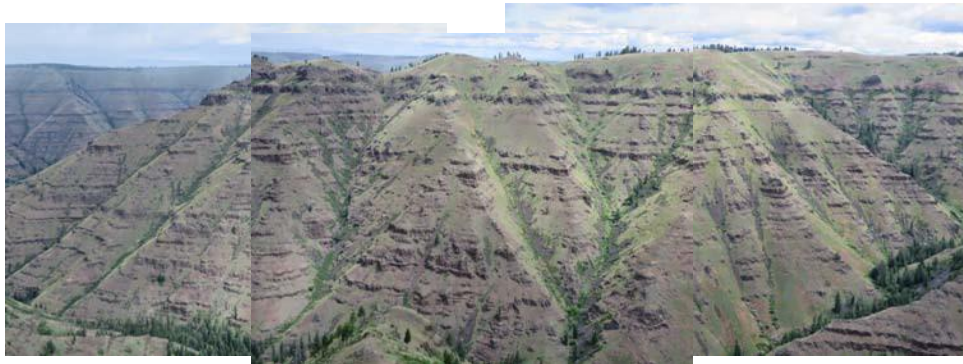
## Horse Pasture Ridge pRNA Detailed Description

### Unique Values:

The Horse Pasture Ridge pRNA and the Haystack Rock pRNA comprise the area allocated to Management Area 12 within the JCRA (*Joseph Creek Rangeland Analysis 2005*). Both pRNA's were identified as potential pRNAs for their representation of native bunchgrass communities. In ecological terms, the desired condition for the potential RNAs is for maintenance of late-seral plant communities.

Idaho fescue-prairie junegrass and Idaho fescue – bluebunch wheatgrass plant associations in ridge top communities. A key geologic feature is a large outcropping of welded tuff (unique in the Columbia River basalts of northeast Oregon). The Oregon sensitive plant Englemann's Daisy (*Erigeron engelmannii* var. *davisii*) is found on Horse Pasture Ridge and within the proposed RNA. (*Info from Project Description provided by J. Ferriel*)

Topography: Horse Pasture Ridge pRNA is named for the ridge that runs east-west along the north part of the pRNA. The top of the ridge is about 4460 feet (1360 m). A series of five finger ridges run from the top of Horse Pasture Ridge down to Peavine Creek, descending to around 2740 feet (836 m). The slopes are steep and banded with exposed rock. (*Info from Description*



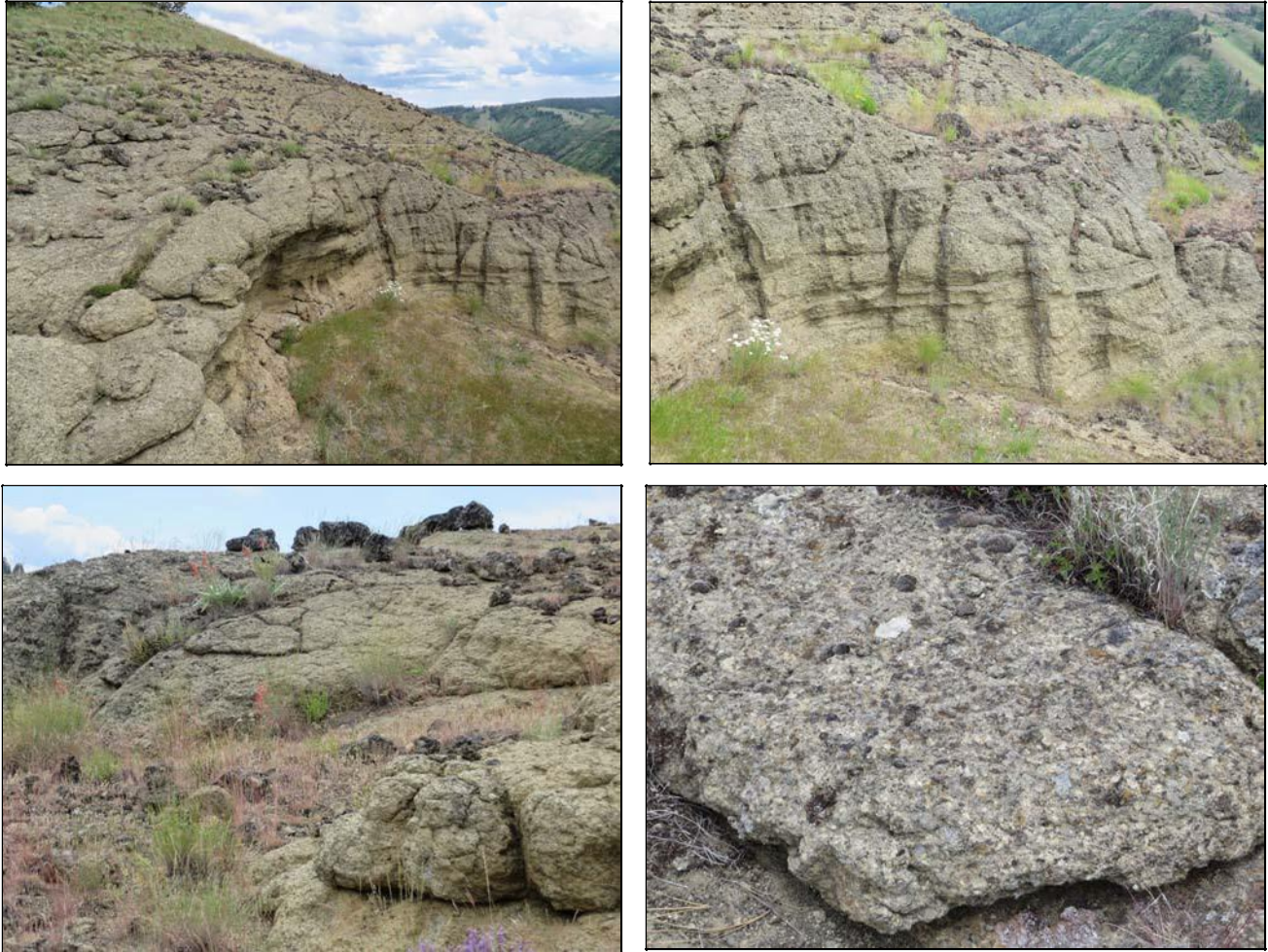
*by J. Ferriel)*

*Panoramic photo of Horse Pasture Ridge pRNA slopes, looking north, from a vantage point to the south on Table Mt.*

The photos above show the very steep terrain and banded rock cliffs that go from the top of the pRNA main ridge all the way down to Peavine Creek drainage. All the established photopoints are along the very top ridge, for a reason!

Geology and Soils: Soils were formed in loess and ash mixed with residuum and colluvium from basalt, andesite or welded tuff. Most of the soils in the area are shallow and well drained, combined with small areas of deeper soil, also well drained. (*Info from Project Description provided by J. Ferriel*). A key geologic feature is a large outcropping of welded tuff (unique in

the Columbia River basalts of northeast Oregon), see photos below and also Plot photo #JST 2959 in the Ecoplot section below. Photos by G. Lind, June 12, 2014.



*Welded Tuff Rock Feature on top ridge of Horse Pasture Ridge pRNA*

Climate: Eastern Oregon has a temperate continental climate, characterized by arid summers with occasional evening convection thunderstorms and cold winters with the majority of the annual precipitation falling as snow. The closest weather station is in Enterprise, OR and should be a fair approximation for Horse Pasture Ridge with differences attributed to Enterprise being closer to and more under the influence of the Wallowa Mountains. The station receives 17.6 inches (44.7 cm) annual precipitation with a mean annual temperature of 43.4 F (6.33 C). Summer high temperatures range into the upper 90's F while winter temperatures can drop to the -20's F. *(Info from Project Description provided by J. Ferriel)*

Springs and seeps: Canyons and slopes within the Horse Pasture Ridge pRNA all appear to be dry without any springs or seeps noted. No springs were noted on existing topographic USGS



maps or FS maps. There is a livestock water pond on top of the ridge to east of the pRNA boundary about ½ mile.

Signs of Recreational use: Use appears very limited due to difficult access to the pRNA along the Horse Pasture Ridge which is just a two track 4x4 high clearance access last couple of miles. Hunting would likely be the only recreational use. Bighorn sheep (5-6 animals) were sighted at the Horse Pasture Ridge pRNA (See photo below).



*Bighorn Sheep in Horse Pasture Ridge pRNA, located out on far west ridge point*

Signs of livestock grazing: The condition of this area was evaluated in 2003 by the Wallowa Mountains Office range manager and botanist. It was determined that plant communities were in good to excellent condition and basically ungrazed by domestic livestock with the exception of the northeastern boundary where livestock were once salted near the potential RNA perimeter. (JCRA 2005).

Grazing has been a concern in the past. The area is located within the Horse Pasture Ridge Unit of the Table Mountain C&H Allotment. This allotment rests or defers use on all pastures at least every third year. In 2011 Horse Pasture Ridge unit was rested. Allowed utilization is 10%. (Info from Project Description provided by J. Ferriel)

A livestock water pond development is just to east of the pRNA on Horse Pasture Ridge. See [Map 2](#) above and photo below. This brings livestock toward the ridgeline at the top of the pRNA.



*Livestock pond on Horse Pasture Ridge, to east of the pRNA boundary*

Disturbance history: The JCRA 2005 did note that the area had been affected by the 1986 Joseph Creek Fire. Livestock grazing is occurring but is considered to be light.

Vegetation: JCAA notes this area is representative of Idaho fescue/prairie junegrass ridgetop communities, Idaho fescue/bluebunch wheatgrass ridgetop communities, and Idaho fescue/bluebunch wheatgrass/arrowleaf balsamroot communities.

The vegetation is primarily bunchgrasses with the exception of a few patches of dry forest in north and east-facing exposures of the draws below Horse Pasture Ridge. This proposed area was made in tandem with Haystack Rock. It compliments Haystack Rock (a macro-slope below Table Mountain and above Joseph Creek) by containing high quality ridge top bunchgrass communities. The principal elements are Idaho fescue-prairie junegrass and Idaho fescue – bluebunch wheatgrass plant associations in ridge top communities. *(Info from Project Description provided by J. Ferriel)*

Occurrence of exotic species: The Lower Joseph Creek Restoration Project, Wallowa-Whitman National Forest (ongoing 2014) notes the presence of scotch thistle and diffuse knapweed for the Table Mt allotment and indicates that the scotch thistle infestation is associated with private pasture lands and is declining in the allotment. The diffuse knapweed is noted as “no change/stable” status in the allotment . The June 2014 reconnaissance survey (G. Lind) did not

note any scotch thistle or diffuse knapweed in the Haystack pRNA or adjacent areas. Weedy brome-grasses (BRTE, BRMO, BRBR) are present in many spots.

Rare, threatened, endangered, or sensitive species

Spalding's catchfly (*Silene spaldingii*) is a FWS Threatened Species and potential habitat is suspected in the Table Mt Allotment (Lower Joseph Creek Restoration Project, Wallowa-Whitman National Forest, Ongoing 2014); however, 2014 field surveys (G. Lind) were likely too early to find this species. No populations of Spalding's catchfly are known from Table Mt Allotment or either of the pRNAs.

Forest Service Sensitive plant species known to occur or with potential include: Snake River Daisy

(*Erigeron disparipilus*), Engelmann's Daisy (*Erigeron engelmanni* var. *davisii*)<sup>4</sup>, and Hazel's Prickly Phlox (*Leptodactylon pungens* ssp. *hazeliae*). There are known sites for Engelmann's daisy in the Horse Pasture Ridge pRNA, just outside of the boundary to the east along main ridgeline access road (see Map 1 above). Photos below are of those *Erigeron engelmanni* var. *davisii* known sites.



*Erigeron engelmanni* var. *davisii*

45.889713° N, 117.186283° W



Habitat for *Erigeron engelmanni* var. *davisii*

45.887802° N, 117.185810° W

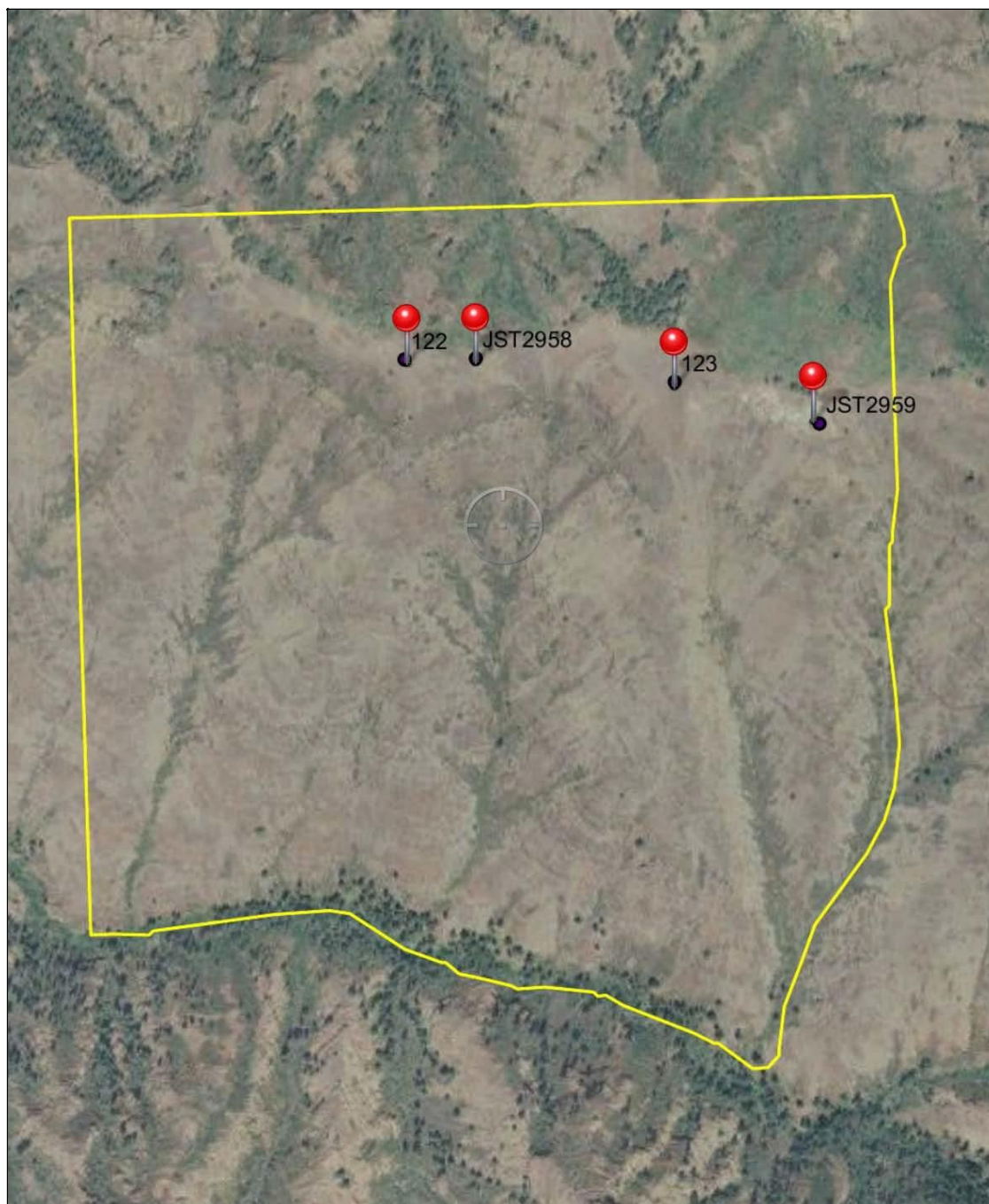
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<sup>4</sup> Note that *Erigeron engelmanni* var. *davisii* has been renamed to Davis' fleabane (*Erigeron davisii*) by recent taxonomic updates.





Permanent research plots and/or photo points: Ecology Plots by Charlie Johnson, Zone Ecologist, or the WWNF Ecology group are noted in map 4 below. These plots were re-photographed during the 2014 survey by G. Lind. See photos below (all photos taken June



12, 2014 by G. Lind)

Map 4. Horse Pasture Ridge pRNA with established photopoints/ecology plots





Horse Pasture Ridge pRNA established Plots/Photopoints

| <u>Plot #</u> | <u>GPS WGS 84*</u>   | <u>UTM *</u>        |
|---------------|----------------------|---------------------|
| #122          | 45.88893, -117.20061 | 4 84432E, 50 81722N |
| #123          | 45.88848, -117.19545 | 4 84836E, 50 81674N |
| #JST 2958     | 45.83981, -117.22058 | 4 85049E, 50 81604N |
| #JST 2959     | 45.88785, -117.19265 | 4 84540E, 50 81720N |

\* GPS WGS 84 from G. Lind using Backcountry Navigator APP on Nexus 7 tablet. UTMS from Jennifer Ferriel, WWNF.



Plot #122 view from 0'



Plot #122 view from 0'



Plot#122 view from 100'



Plot#122 view from 100'



Plot 123A, view from 0'



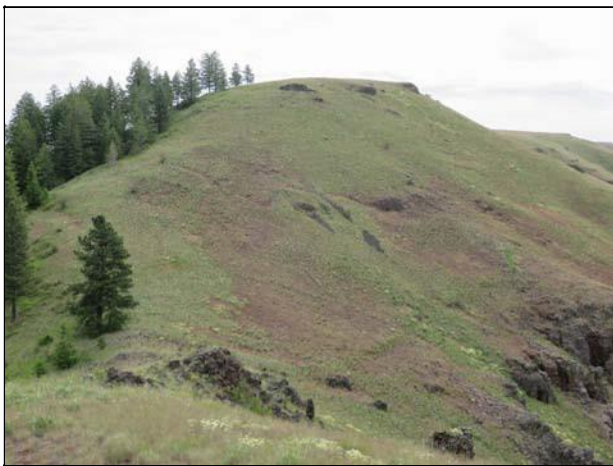
Plot 213A, view from 0'



Plot 123A, view from 100'



Plot 123A, view from 100'



Plot JST 2958



Plot JST 2959



Photographs: A larger album of all photos taken by G. Lind in 2014 for both pRNAs can be found at this link:

<https://picasaweb.google.com/117725403025106999373/WWNFRNAProject02?authuser=0&authkey=Gv1sRgCP-I3trN5sLv7wE&feat=directlink>

Flora and Fauna Species Lists: See plant list and animal lists at end of report

## **Summary and Recommendations- Horse Pasture Ridge pRNA by G. Lind**

Horse Pasture Ridge pRNA is extremely steep and very difficult to survey or walk in. Due to that topography, the existing eco plots were likely placed along the upper main ridge to be accessible for monitoring. The entire pRNA was not checked due to terrain issues and safety concerns in 2014, I was alone without backup support in case of an accident or other injury. The pRNA has banded cliffs that restrict access and make surveys hazardous. Only the rounded spine of the upper Horse Pasture Ridge allows some reasonable safe access downslope from the top ridge. Vegetation types are difficult to map as the steep topography and dissected slopes results in many banded vegetation polygons that tend to be aligned up and down slopes. Much of the upper pRNA by the main ridge is where you find the best FEIS bunchgrass types that are the primary reason for this pRNA. The lower dissected ridges tend to have rocky and shallow soils and support small areas of other POSE types. North aspect slopes have PSME/PHMA types with shrubland talus in between that contain HODO and PHLE2, Sambucus, and Rosa. The pRNA boundary includes the burned PSME/PHMA forested type on the north aspect of the upper main Horse Pasture ridge.

I would suggest that the pRNA boundary be redrawn to eliminate this forested type, as the main reason for the pRNA is the study of the FEIS bunchgrass types. The 2014 survey did look at this PSME/PHMA type and some of the species in the plant list table are only found in the PSME/PHMA types.

Bighorn sheep are using the steep topography and provides an interesting wildlife addition to this pRNA.

Weedy brome grass sites are also found in this pRNA, and are described with photos in the Haystack pRNA section of this report.

No ventanata grass sites were noted during 2014 surveys, but there are likely areas of ventanata grass sites within or adjacent to the weedy brome spots as noted in the discussion on Haystack Rock pRNA. Also there is high probability that more populations of *Erigeron engelmanni* var. *davisii* are within the Haystack pRNA on the south aspect ridges with shallow soils. Additional surveys would likely be able to document many more of these *Erigeron engelmanni* var. *davisii* populations if more site data is needed for species status updates.





Survey Flora Species List<sup>5</sup>

| R6 CODE                  | GENUS          | SPECIES      | COMMON1-first      | Common1-second |
|--------------------------|----------------|--------------|--------------------|----------------|
| <b>TREE<br/>Species</b>  |                |              |                    |                |
| JUOC                     | Juniperus      | occidentalis | western            | juniper        |
| PIPO                     | Pinus          | ponderosa    | Ponderosa          | pine           |
| PSME                     | Pseudotsuga    | menziesii    | Douglas fir        |                |
| <b>Shrub<br/>Specis</b>  |                |              |                    |                |
| AMAL                     | Amelanchier    | alnifolia    | western            | serviceberry   |
| HODI                     | Holodiscus     | discolor     | ocean-spray        |                |
| PHLE2                    | Philadelphus   | lewisii      | Lewis'             | mock-orange    |
| PHMA                     | Physocarpus    | malvaceus    | mallow             | ninebark       |
| PRVI                     | Prunus         | virginiana   | common chokecherry |                |
| RICE                     | Ribes          | cereum       | wax                | currant        |
| RIIN                     | Ribes          | inerme       | white stem         | gooseberry     |
| ROWO                     | Rosa           | woodsii      | pear-hip           | rose           |
| SASC                     | Salix          | scouleriana  | Scouler            | willow         |
| SACE                     | Sambucus       | cerulea      | blue               | elderberry     |
| SYAL                     | Symphoricarpos | albus        | common             | snowberry      |
| SYOR                     | Symphoricarpos | oreophilus   | mountain           | snowberry      |
| <b>Grass<br/>Species</b> |                |              |                    |                |
| AGSP                     | Agropyron      | spicatum     | bluebunch          | wheatgrass     |
| BRBR                     | Bromus         | brizaeformis | rattlesnake        | brome          |
| BRJA                     | Bromus         | japonicus    | Japanese           | brome          |
| BRMO                     | Bromus         | mollis       | soft               | brome          |
| BRTE                     | Bromus         | tectorum     | cheatgrass         |                |
| CARU                     | Calamagrostis  | rubescens    | pinegrass          |                |
| FEID                     | Festuca        | idahoensis   | Idaho              | fescue         |
| KOCR                     | Koeleria       | cristata     | prairie            | junegrass      |
| PONE2                    | Poa            | nevadensis   | Nevada             | bluegrass      |
| POSA3                    | Poa            | sandbergii   | Sandberg's         | bluegrass      |
| VEDU <sup>6</sup>        | Ventenata      | dubia        | ventenata          |                |

<sup>5</sup> Species List was compiled from previous Eco Plot data and Lind Survey 2014. List is not separated by Plant Association type.

<sup>6</sup> Ventenata grass was observed at one location just outside of the Haystack RNA. Small population within BRBR/BRTE/BRMO weedy spot. 45.835858° N, 117.215463° W

| Forb Species |                |                  |                   |               |
|--------------|----------------|------------------|-------------------|---------------|
| ACMI         | Achillea       | millefolium      | yarrow            |               |
| AGGL         | Agoseris       | glauca           | pale              | agoseris      |
| AGHE         | Agoseris       | heterophylla     | annual            | agoseris      |
| ALAC         | Allium         | acuminatum       | tapertip          | onion         |
| ALTOP        | Allium         | tolmiei          | Tolmie's          | onion         |
| ALAL         | Alyssum        | alyssoides       | pale              | alyssum       |
| ANST         | Antennaria     | stenophylla      | narrow leaved     | pussytoes     |
| ARCO         | Arnica         | cordifolia       | heart leaf        | arnica        |
| ASCO         | Aster          | conspicuus       | showy             | aster         |
| BASA         | Balsamorhiza   | sagittata        | arrowleaf         | balsamroot    |
| BERU         | Besseyia       | rubra            | kitten-tails      |               |
| BLSC         | Blepharipappus | scaber           | blepharipappus    |               |
| BRGR2        | Brickellia     | grandiflora      | large flowered    | brickellia    |
| BRDO         | Brodiaea       | douglasii        | Douglas'          | brodiaea      |
| CAMA         | Calochortus    | macrocarpus      | sagebrush         | mariposa lily |
| CAEL         | Calochortus    | elegans          | northwestern      | mariposa lily |
| CAH12        | Castilleja     | hispida          | harsh             | paintbrush    |
| CASTI        | Castilleja     | spp.             | yellow            | paintbrush    |
| CIRSI        | Cirsium        | spp.             |                   |               |
| CLPU         | Clarkia        | pulchella        | pink-fairies      |               |
| COL12        | Collomia       | linearis         | narrow leaf       | collomia      |
| CRAC         | Crepis         | acuminata        | long leaved       | hawksbeard    |
| EPPA         | Epilobium      | paniculatum      | tall annual       | willow-herb   |
| EREND        | Erigeron       | engelmannii      | Engelmann's       | daisy         |
| ERHE         | Eriogonum      | heracleoides     | Wyeth's creamy    | buckwheat     |
| ERIOG        | Eriogonum      | spp.             | Pink Flw          | buckwheat     |
| ERLA         | Eriophyllum    | lanatum          | Oregon sunshine   |               |
| FRSP         | Frasera        | speciosa         | giant             | frasera       |
| GETR         | Geum           | triflorum        | red               | avens         |
| GIAG         | Gilia          | aggregata        | sky-rocket        | gilia         |
| GRSQ         | Grindelia      | squarrosa        | resinweed         |               |
| HEUN         | Helianthella   | uniflora         | Douglas'          | helianthella  |
| HEGR         | Heuchera       | grossulariifolia | gooseberry leaved | alumroot      |
| HIAL2        | Hieracium      | albertinum       | Scouler's         | hawkweed      |
| LASE         | Lactuca        | serriola         | prickly           | lettuce       |
| LANEC        | Lathyrus       | nevadensis       | Cusick's          | peavine       |
| LEDE         | Lepidium       | densiflorum      | prairie           | pepper-grass  |
| LIRU         | Lithospermum   | ruderales        | wayside           | gromwell      |
| LOAM         | Lomatium       | ambiguum         | Wyeth             | biscuitroot   |



|       |             |               |               |                |
|-------|-------------|---------------|---------------|----------------|
| LOCO2 | Lomatium    | cous          | cous          | biscuitroot    |
| LODI2 | Lomatium    | dissectum     | fern leaved   | desert parsley |
| LOTR  | Lomatium    | triternatum   | nine leaf     | desert parsley |
| LUSE  | Lupinus     | sericeus      | silky         | lupine         |
| MINA  | Mimulus     | nanus         | dwarf         | monkey-flower  |
| PEDE  | Penstemon   | deustus       | white         | penstemon      |
| PEFR3 | Penstemon   | fruticosus    | shrubby       | penstemon      |
| PHHE  | Phacelia    | heterophylla  | vari-leaf     | phacelia       |
| PHLI  | Phacelia    | linearis      | thread-leaf   | phacelia       |
| PHLO  | Phlox       | longifolia    | long-leaved   | phlox          |
| PODO  | Polygonum   | douglasii     | Douglas'      | knotweed       |
| POGLN | Potentilla  | glandulosa    | glandular     | cinquefoil     |
| POMA2 | Polygonum   | majus         | wiry          | knotweed       |
| SCAN  | Scutellaria | angustifolia  | narrow-leaved | skullcap       |
| SELA2 | Sedum       | lanceolatum   | lance-leaf    | stonecrop      |
| SIAL  | Sisymbrium  | altissimum    | tumble        | mustard        |
| TRDU  | Tragopogon  | dubius        | yellow        | salsify        |
| TRMA  | Trifolium   | macrocephalum | big-headed    | clover         |
| ZIVE  | Zigadenus   | venenosus     | meadow        | death-camas    |

## Fauna Species List

(compiled by Todd Wilson, R6 Research Natural Area Coordinator)

| Scientific Name                 | Common Name                      |
|---------------------------------|----------------------------------|
| <u>Amphibian</u>                |                                  |
| <i>Bufo boreas</i>              | Western Toad                     |
| <i>Pseudacris regilla</i>       | Pacific Tree Frog                |
| <u>Reptile</u>                  |                                  |
| <i>Bufo boreas</i>              | Western Toad                     |
| <i>Pseudacris regilla</i>       | Pacific Tree Frog                |
| <i>Charina bottae</i>           | Rubber Boa                       |
| <i>Coluber constrictor</i>      | Racer                            |
| <i>Masticophis taeniatus</i>    | Striped Whipsnake                |
| <i>Pituophis catenifer</i>      | Gopher Snake                     |
| <i>Thamnophis elegans</i>       | Western Terrestrial Garter Snake |
| <i>Thamnophis sirtalis</i>      | Common Garter Snake              |
| <i>Sceloporus occidentalis</i>  | Western Fence Lizard             |
| <i>Eumeces skiltonianus</i>     | Western Skink                    |
| <i>Crotalus oreganus</i>        | Western Rattlesnake              |
| <u>Bird</u>                     |                                  |
| <i>Anas crecca</i>              | Green-winged teal                |
| <i>Anas platyrhynchos</i>       | Mallard                          |
| <i>Branta canadensis</i>        | Canada goose                     |
| <i>Lophodytes cucullatus</i>    | Hooded merganser                 |
| <i>Aeronautes saxatalis</i>     | White-throated swift             |
| <i>Chaetura vauxi</i>           | Vaux's swift                     |
| <i>Archilochus alexandri</i>    | Black-chinned hummingbird        |
| <i>Selasphorus rufus</i>        | Rufous hummingbird               |
| <i>Stellula calliope</i>        | Calliope hummingbird             |
| <i>Chordeiles minor</i>         | Common nighthawk                 |
| <i>Phalaenoptilus nuttallii</i> | Common poorwill                  |
| <i>Charadrius vociferus</i>     | Killdeer                         |
| <i>Actitis macularius</i>       | Spotted sandpiper                |
| <i>Gallinago delicata</i>       | Wilson's snipe                   |
| <i>Numenius americanus</i>      | Long-billed curlew               |
| <i>Phalaropus tricolor</i>      | Wilson's phalarope               |
| <i>Ardea herodias</i>           | Great blue heron                 |
| <i>Cathartes aura</i>           | Turkey vulture                   |
| <i>Columba livia</i>            | Rock pigeon                      |
| <i>Zenaida macroura</i>         | Mourning dove                    |
| <i>Ceryle alcyon</i>            | Belted kingfisher                |
| <i>Accipiter cooperii</i>       | Cooper's hawk                    |
| <i>Accipiter gentilis</i>       | Northern goshawk                 |
| <i>Accipiter striatus</i>       | Sharp-shinned hawk               |
| <i>Aquila chrysaetos</i>        | Golden eagle                     |
| <i>Buteo jamaicensis</i>        | Red-tailed hawk                  |

Birds cont.

|                                   |                       |
|-----------------------------------|-----------------------|
| <i>Buteo regalis</i>              | Ferruginous hawk      |
| <i>Buteo swainsoni</i>            | Swainson's hawk       |
| <i>Circus cyaneus</i>             | Northern harrier      |
| <i>Haliaeetus leucocephalus</i>   | Bald eagle            |
| <i>Pandion haliaetus</i>          | Osprey                |
| <i>Falco mexicanus</i>            | Prairie falcon        |
| <i>Falco sparverius</i>           | American kestrel      |
| <i>Callipepla californica</i>     | California quail      |
| <i>Alectoris chukar</i>           | Chukar                |
| <i>Bonasa umbellus</i>            | Ruffed grouse         |
| <i>Dendragapus obscurus</i>       | Blue grouse           |
| <i>Meleagris gallopavo</i>        | Wild turkey           |
| <i>Perdix perdix</i>              | Gray partridge        |
| <i>Phasianus colchicus</i>        | Ring-necked pheasant  |
| <i>Fulica americana</i>           | American coot         |
| <i>Porzana carolina</i>           | Sora                  |
| <i>Rallus limicola</i>            | Virginia rail         |
| <i>Eremophila alpestris</i>       | Horned lark           |
| <i>Bombycilla cedrorum</i>        | Cedar waxwing         |
| <i>Passerina amoena</i>           | Lazuli bunting        |
| <i>Pheucticus melanocephalus</i>  | Black-headed grosbeak |
| <i>Certhia americana</i>          | Brown creeper         |
| <i>Cinclus mexicanus</i>          | American dipper       |
| <i>Corvus brachyrhynchos</i>      | American crow         |
| <i>Corvus corax</i>               | Common raven          |
| <i>Cyanocitta stelleri</i>        | Steller's jay         |
| <i>Nucifraga columbiana</i>       | Clark's nutcracker    |
| <i>Perisoreus canadensis</i>      | Gray jay              |
| <i>Pica hudsonia</i>              | Black-billed magpie   |
| <i>Chondestes grammacus</i>       | Lark sparrow          |
| <i>Junco hyemalis</i>             | Dark-eyed junco       |
| <i>Melospiza lincolni</i>         | Lincoln's sparrow     |
| <i>Melospiza melodia</i>          | Song sparrow          |
| <i>Passerculus sandwichensis</i>  | Savannah sparrow      |
| <i>Passerella iliaca</i>          | Fox sparrow           |
| <i>Pipilo chlorurus</i>           | Green-tailed towhee   |
| <i>Pipilo maculatus</i>           | Spotted towhee        |
| <i>Poocetes gramineus</i>         | Vesper sparrow        |
| <i>Spizella breweri</i>           | Brewer's sparrow      |
| <i>Spizella passerina</i>         | Chipping sparrow      |
| <i>Carduelis pinus</i>            | Pine siskin           |
| <i>Carduelis tristis</i>          | American goldfinch    |
| <i>Carpodacus cassinii</i>        | Cassin's finch        |
| <i>Carpodacus mexicanus</i>       | House finch           |
| <i>Coccothraustes vespertinus</i> | Evening grosbeak      |



|                                      |                               |
|--------------------------------------|-------------------------------|
| <i>Loxia curvirostra</i>             | Red crossbill                 |
| <i>Hirundo rustica</i>               | Barn swallow                  |
| <i>Petrochelidon pyrrhonota</i>      | Cliff swallow                 |
| <i>Riparia riparia</i>               | Bank swallow                  |
| <i>Stelgidopteryx serripennis</i>    | Northern rough-winged swallow |
| <i>Tachycineta bicolor</i>           | Tree swallow                  |
| <i>Tachycineta thalassina</i>        | Violet-green swallow          |
| <i>Agelaius phoeniceus</i>           | Red-winged blackbird          |
| <i>Euphagus cyanocephalus</i>        | Brewer's blackbird            |
| <i>Icterus bullockii</i>             | Bullock's oriole              |
| <i>Molothrus ater</i>                | Brown-headed cowbird          |
| <i>Sturnella neglecta</i>            | Western meadowlark            |
| <i>Xanthocephalus xanthocephalus</i> | Yellow-headed blackbird       |
| <i>Dumetella carolinensis</i>        | Gray catbird                  |
| <i>Poecile atricapillus</i>          | Black-capped chickadee        |
| <i>Poecile gambeli</i>               | Mountain chickadee            |
| <i>Poecile rufescens</i>             | Chestnut-backed chickadee     |
| <i>Dendroica coronata</i>            | Yellow-rumped warbler         |
| <i>Dendroica petechia</i>            | Yellow warbler                |
| <i>Dendroica townsendi</i>           | Townsend's warbler            |
| <i>Geothlypis trichas</i>            | Common yellowthroat           |
| <i>Icteria virens</i>                | Yellow-breasted chat          |
| <i>Oporornis tolmiei</i>             | Macgillivray's warbler        |
| <i>Setophaga ruticilla</i>           | American redstart             |
| <i>Wilsonia pusilla</i>              | Wilson's warbler              |
| <i>Regulus calendula</i>             | Ruby-crowned kinglet          |
| <i>Regulus satrapa</i>               | Golden-crowned kinglet        |
| <i>Sitta canadensis</i>              | Red-breasted nuthatch         |
| <i>Sitta carolinensis</i>            | White-breasted nuthatch       |
| <i>Sturnus vulgaris</i>              | European starling             |
| <i>Piranga ludoviciana</i>           | Western tanager               |
| <i>Catherpes mexicanus</i>           | Canyon wren                   |
| <i>Cistothorus palustris</i>         | Marsh wren                    |
| <i>Salpinctes obsoletus</i>          | Rock wren                     |
| <i>Troglodytes aedon</i>             | House wren                    |
| <i>Troglodytes troglodytes</i>       | Winter wren                   |
| <i>Catharus guttatus</i>             | Hermit thrush                 |
| <i>Catharus ustulatus</i>            | Swainson's thrush             |
| <i>Ixoreus naevius</i>               |                               |
| Birds cont.                          | Varied thrush                 |
| <i>Myadestes townsendi</i>           | Townsend's solitaire          |
| <i>Sialia currucoides</i>            | Mountain bluebird             |
| <i>Sialia mexicana</i>               | Western bluebird              |
| <i>Turdus migratorius</i>            | American robin                |
| <i>Contopus cooperi</i>              | Olive-sided flycatcher        |
| <i>Contopus sordidulus</i>           | Western wood-peewee           |
| <i>Empidonax difficilis</i>          | Pacific slope flycatcher      |

|                               |                                |
|-------------------------------|--------------------------------|
| <i>Empidonax hammondi</i>     | Hammond's flycatcher           |
| <i>Empidonax oberholseri</i>  | Dusky flycatcher               |
| <i>Empidonax occidentalis</i> | Cordilleran flycatcher         |
| <i>Empidonax traillii</i>     | Willow flycatcher              |
| <i>Sayornis saya</i>          | Say's phoebe                   |
| <i>Tyrannus verticalis</i>    | Western kingbird               |
| <i>Vireo cassinii</i>         | Cassin's vireo                 |
| <i>Vireo gilvus</i>           | Warbling vireo                 |
| <i>Colaptes auratus</i>       | Northern flicker               |
| <i>Dryocopus pileatus</i>     | Pileated woodpecker            |
| <i>Melanerpes lewis</i>       | Lewis's woodpecker             |
| <i>Picoides albolarvatus</i>  | White-headed woodpecker        |
| <i>Picoides arcticus</i>      | Black-backed woodpecker        |
| <i>Picoides dorsalis</i>      | American three-toed woodpecker |
| <i>Picoides pubescens</i>     | Downy woodpecker               |
| <i>Picoides villosus</i>      | Hairy woodpecker               |
| <i>Sphyrapicus nuchalis</i>   | Red-naped sapsucker            |
| <i>Sphyrapicus thyroideus</i> | Williamson's sapsucker         |
| <i>Aegolius acadicus</i>      | Northern saw-whet owl          |
| <i>Asio otus</i>              | Long-eared owl                 |
| <i>Bubo virginianus</i>       | Great horned owl               |
| <i>Glaucidium gnoma</i>       | Northern pygmy-owl             |
| <i>Megascops kennicottii</i>  | Western screech-owl            |
| <i>Otus flammeolus</i>        | Flammulated owl                |
| <i>Strix nebulosa</i>         | Great gray owl                 |
| <i>Strix varia</i>            | Barred owl                     |
| <u>Mammals</u>                |                                |
| <i>Ovis canadensis</i>        | Bighorn Sheep                  |
| <i>Cervus elaphus</i>         | Elk                            |
| <i>Odocoileus hemionus</i>    | Mule Deer                      |
| <i>Canis latrans</i>          | Coyote                         |
| <i>Canis lupus</i>            | Gray Wolf                      |
| <i>Vulpes vulpes</i>          | Red Fox                        |
| <i>Puma concolor</i>          | Cougar/Mountain Lion           |
| <i>Mustela frenata</i>        |                                |
| Mammals cont.                 | Long-tailed Weasel             |
| <i>Taxidea taxus</i>          | American Badger                |
| <i>Antrozous pallidus</i>     | Pallid Bat                     |
| <i>Myotis californicus</i>    | California Myotis              |
| <i>Myotis ciliolabrum</i>     | Western Small-footed Myotis    |
| <i>Myotis yumanensis</i>      | Yuma Myotis                    |
| <i>Sylvilagus nuttallii</i>   | Mountain Cottontail            |
| <i>Peromyscus maniculatus</i> | North American Deermouse       |
| <i>Erethizon dorsatum</i>     | North American Porcupine       |
| <i>Marmota flaviventris</i>   | Yellow-bellied Marmot          |